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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,710	11/13/2001	Nabil Rizkalla	SD-200B	3266

7590 12/19/2002
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EXAMINER

NGUYEN, NGOC YEN M

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 12/19/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/056,710	Applicant(s) RIZKALLA ET AL.	
	Examiner Ngoc-Yen M. Nguyen	Art Unit 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

The disclosure is objected to because of the following informalities: it is unclear how the "S/2Cs" ratio was calculated. Also, it is unclear if Example 6 (note Table 2) is an example of the claimed invention or a comparative example because its "S/2Cs" ratio of 2.32 represents 232% of the equivalent amount of sulfur to form cesium sulfate (note instant specification, page 12) and this value is outside of the claimed range of 40%-150%.

Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-4, 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Soo et al (5,102,848).

Soo '848 discloses catalysts and processes for using the catalysts for the epoxidation of ethylene to produce ethylene oxide (note column 1, lines 5-7). In Table III, Soo '848 discloses a catalyst which has Ag, 1096 ppm Cs, 135 ppm S and 80 ppm F (note catalyst No. 6) on an alpha alumina carrier (note Carrier A, column 18, last line).

The sulfur amount in Soo '848 in term of % of the equivalent weight necessary to form the alkali metal sulfate is calculated in this Office action based upon the valued

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disclosed in Examples of the instant specification because it is unclear how such value can be calculated directly of the ppm concentrations of S and Cs. From Table 1 of the instant specification, when the ratio of S (in ppm) over Cs (in ppm) (i.e., 85/1050) is 0.08095, the "S/2Cs" ratio is 0.672 or 67.2% of the equivalent amount of sulfur to form cesium sulfate. Thus, the equivalent amount of sulfur to form cesium sulfate is calculated by multiplying the ppm ratio of S/Cs with "0.672" and dividing by "0.08095" and converting the result to percentage. For example, in Example 4 of the instant specification, the equivalent amount of sulfur to form cesium sulfate would be

$$\frac{307 \text{ ppm of S}}{2552 \text{ ppm of Cs}} \times \frac{0.672}{0.08095} = 1 \times 100\% = 100\%$$

For catalyst 6 of Soo '848,

$$\frac{135 \text{ ppm of S}}{1096 \text{ ppm of Cs}} \times \frac{0.072}{0.08095} = 1.02 \times 100\% = 102\%.$$

The catalyst and process of producing ethylene oxide as disclosed in Soo '848 anticipate the claimed product and process.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Rizkalla et al (5,854,167).

Rizkalla '167 discloses a rhenium and transition metal free catalyst for the oxidation of ethylene to ethylene oxide comprised of silver on a solid support and containing a promotor combination consisting essentially of (1) an alkali metal component in amount not greater than 3000 ppm based on the weight of the catalyst, (2) a sulfur component in amount of 5-300 ppm based on the weight of the catalyst, (3) a germanium or tin component and (4) fluorine component in amount of 10-2000 ppm

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based on the weight of the catalyst (note claim 1). The alkali metal can be cesium in amount of 400-800 ppm based on the weight of the catalyst (note claims 2-3). The support can be alpha alumina (note claim 4) and the catalyst can contain 5-20% silver (note claim 5).

In Table 1, run 3, 34 ppm S and 606 ppm Cs, using the calculation as stated above, the equivalent weight of S to form cesium sulfate is about 47%. This value is well within the claimed range. From the claimed ranges of 5-300 ppm for S and "not greater than 3000 ppm for the Cs (note claim 1), Rizkalla '167 fairly teaches, with sufficient specificity, a catalyst with 300 ppm S and 3000 ppm for Cs, this catalyst would have an equivalent weight of S to form cesium sulfate of 83%. Also, Rizkalla '167 discloses the most preferred range for Cs is 500-1000 ppm (note column 2, lines 41-43) and for S is 20-150 ppm (note column 2, lines 57-59). Thus, Rizkalla '167 also discloses, with sufficient specificity, a catalyst having 1000 ppm of Cs and 150 ppm of S, and this catalyst would have an equivalent weight of S to form cesium sulfate of 125%.

The product and process as disclosed in Rizkalla '167 anticipate the claimed product and process.

Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Rizkalla et al (5,905,053) or Rizkalla et al (5,958,824).

Rizkalla '053 discloses a rhenium and transition metal free catalyst for the oxidation of ethylene to ethylene oxide consisting essentially of silver on a solid support and containing a promoter combination consisting essentially of (1) an alkali metal component in amount not greater than 3000 ppm based on the weight of the catalyst, (2) a sulfur component in amount of 5-300 ppm based on the weight of the catalyst, (3)

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a fluorine component in amount of 10-300 ppm based on the weight of the catalyst, and (4) a pnictogen component selected from phosphorus, bismuth and antimony in amount of 10-500 ppm based on the weight of the catalyst (note claim 1). The alkali metal component can be cesium in amount of 400-1000 ppm based on the weight of the catalyst (note claims 2-3). The support can be alpha alumina (note claim 4). The catalyst contains 5-20wt.% of silver (note claim 5).

From Table 1, Run 3, the equivalent weight of sulfur to form cesium sulfate is calculated out to be about 83% (note the above rejection). Furthermore, the preferred ranges and the claimed range would fairly teach, with sufficient specificity, other catalysts with the equivalent weight of sulfur to form cesium sulfate within the claimed range.

The product and process of Rizkalla '053 anticipate the claimed product and process.

Alternatively, Rizkalla '824 discloses a rhenium and transition metal free catalyst for the oxidation of ethylene to ethylene oxide consisting essentially of silver on a solid support and containing a promoter combination consisting essentially of (1) a cesium component in amount not greater than 1500 ppm based on the weight of the catalyst, (2) a sulfur component in amount of 5-300 ppm based on the weight of the catalyst, and (3) a lanthanide component in amount of 10-500 ppm based on the weight of the catalyst (note claim 1). The cesium component is in amount of 400-1000 ppm based on the weight of the catalyst (note claim 2). The support is alpha alumina (note claim 3). The catalyst comprises 5-20wt% of silver (note claim 4). The catalyst additionally contains 10-300 ppm of a fluorine component.

From Table 1, Run 3, the equivalent weight of sulfur to form cesium sulfate is calculated out to be about 83%. Furthermore, the preferred ranges and the claimed

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range would fairly teach, with sufficient specificity, other catalysts with the equivalent weight of sulfur to form cesium sulfate within the claimed range.

The product and process of Rizkalla '824 anticipate the claimed product and process.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rizkalla et al (5,854,167).

Rizkalla '167 discloses an ethylene oxide catalyst as stated in the above rejection.

In the event that the disclosure of Rizkalla '167 does not have sufficient specificity for a catalyst having more "at least 1000 ppm" of an alkali metal component and a sulfur component in amount of 50-150% of the equivalent weight necessary to form the alkali metal sulfate, the ranges disclosed in Rizkalla '167 for these limitations overlap the claimed ranges.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (703) 308-2536. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (703) 308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
December 16, 2002